LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A method of manufacturing a semiconductor device, comprising the steps of:

forming an oxide film on a semiconductor substrate;

introducing nitrogen into the oxide film; and

thermally oxidizing the oxide film in a gas atmosphere containing oxygen;

wherein the temperature during said thermally oxidizing step is higher than the temperature of all other processes performed later in the manufacture of the semiconductor device than said thermally oxidizing step.

2. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein the nitrogen comprises activated nitrogen.

3. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein the atmosphere in said thermally oxidizing process contains at least one of O_2, O_3, activated oxygen, oxygen radicals and oxygen ions.

4. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein the partial pressure of oxygen is 0.075 to 250 Torr in said thermally oxidizing process.

5. (Original) The method of manufacturing a semiconductor device according to claim 1, further comprising oxy-nitriding process performing a thermal treatment process in an atmosphere contains at least oxygen and nitrogen after said thermally oxidizing process.

6. (Previously Presented) The method of manufacturing a semiconductor device according to claim 5,

wherein the thermally oxidizing process is performed in an atmosphere containing at least oxygen and nitrogen.

7. (Original) The method of manufacturing a semiconductor device according to claim 6,

wherein the gas containing oxygen and nitrogen is at least one gas of NO, N_2O, and NO_2.

8. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein at least a portion of dangling bonds on a surface of the semiconductor substrate that exists at the interface between the semiconductor substrate and the oxide film is terminated by nitrogen.

9. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein nitrogen is introduced in an interface between the oxide film and the semiconductor substrate at 1E11 to 7E14 atoms/cm^2.

10. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein nitrogen is introduced in an interface between the oxide film and the semiconductor substrate at 7E12 atoms/cm^2.

11. (Original) The method of manufacturing a semiconductor device according to claim 1,

wherein the semiconductor substrate is not exposed to the ambient air during the step of introducing nitrogen and the thermally oxidizing process.

12. (Original) The method of manufacturing a semiconductor device according to claim 5,

wherein the semiconductor substrate is not exposed to the ambient air during the step of introducing nitrogen, the thermally oxidizing process, and the oxy-nitriding process.

13. (Currently Amended) A semiconductor device comprising:

a semiconductor substrate; and

an oxide film formed on the semiconductor substrate and having a first surface on a side of said semiconductor substrate and a second surface on an opposite side to said semiconductor substrate, nitrogen being included in the oxide film,

wherein at least a portion of dangling bonds on a surface of the semiconductor substrate that exist at an interface between the semiconductor substrate and the first surface of the oxide film are terminated by nitrogen, and wherein the nitrogen in the oxide film has, in a direction of a depth in the oxide film, a concentration ~~in the oxide film is nonuniform with respect to a depth in~~ profile that monotonically increases from the second surface of the oxide film toward the first surface of the oxide film to reach a peak value and then monotonically decreases up to the first surface of the oxide film, said depth being measured perpendicularly to the interface between the semiconductor substrate and the oxide film.

14. (Original) The semiconductor device according to claim 13, further comprising:

a gate electrode formed on said oxide film;

wherein the concentration of nitrogen within the interface between the gate electrode and the oxide film is higher than the concentration of nitrogen within the oxide film.

15. (Original) The semiconductor device according to claim 13,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 1E11 to 7E14 atoms/cm^2.

16. (Original) The semiconductor device according to claim 14,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 1E11 to 7E14 atoms/cm^2.

17. (Original) The semiconductor device according to claim 15,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 7E12 atoms/cm^2.

18. (Original) The semiconductor device according to claim 16,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 7E12 atoms/cm^2.

19. (Previously Presented) The semiconductor device according to claim 13, wherein the concentration of nitrogen in the oxide film is higher than the concentration of nitrogen within the interface between the oxide film and the semiconductor substrate.

20. (Previously Presented) The semiconductor device according to claim 13, further comprising a gate electrode formed on the oxide film, nitrogen being free from substantial distribution into the gate electrode.

21. (Previously Presented) The semiconductor device comprising:

a semiconductor substrate, a gate oxide film formed on the semiconductor substrate, and a gate electrode formed on the gate oxide film, the gate oxide film having a first portion on side of the semiconductor substrate and a second portion on side of the gate electrode, each of the first

and second portions containing nitrogen therein, the second portion being higher in concentration of nitrogen than the first portion, and nitrogen in the second portion being free from substantial distribution into the gate electrode.

22. (New) The method of manufacturing a semiconductor device according to claim 1, wherein the processes performed later than the step of thermally oxidizing the oxide film include an activation process of impurities.

23. (New) The method of manufacturing a semiconductor device according to claim 22, wherein the activation process is carried out during 10 seconds or less.